

PROJECTED ECONOMIC IMPACTS OF A  
FARM MACHINERY MANUFACTURING FIRM ON ATHENS, OHIO

The attached results show the impacts on the city of Athens, Athens City School district, and Athens County of a typical firm which manufactures farm machinery. It is estimated that 59 persons would be employed. Most of the community data came from reports issued by the state auditor and has not been verified with local officials. Data on the firm are derived from the 1972 Census of Manufactures.

Based upon results of previous research, it was assumed that 40 percent of the new plant employees would be residents of the city of Athens, 30 percent would commute from the rest of the county, 10 percent would move into the county, and 20 percent would commute ~~from~~ outside the county.

Employees in Athens are estimated to earn \$172,257 more than they would otherwise in the first year if the plant was established. Employees in the rest of the county should earn \$119,965 more in the first year. Depending on where they live, these employees are estimated to spend from 20 to 60 percent of their new income in the city. When combined with multiplier effects, this would increase the net incomes of city merchants and their employees by \$27,161 in the first year.

The tax base in the county would expand enough to provide both the city and county with greater increases in revenues than in expenditures. The city should have a net increase in revenues of \$11,257 in the first year. By year 20, this should increase to \$13,960 (after removing inflation) due to the city's 1 percent income tax. Income tax revenues increase over time if real wages rise. Athens County government should have a net gain of \$8,587 in the first year.

The Athens City School District is estimated to have a surplus of \$6,969 in year 1. By year 20 the surplus falls to \$5,270 since property tax revenues on outside millage are frozen at 1977 levels. This uneven pattern of school impacts is a result of the Ohio education finance system which combines an equal yield formula for state aid, a guarantee of no reduction in state aid from one year to the next, and property valuations which change only once every three years.

If no tax abatement is provided, the city's breakeven level of investment for site improvements to attract this type of firm would be \$61,811 (assuming a 5 percent discount rate). Thus, up to \$61,811 could be invested by the city without raising the tax rates. The county could invest another \$46,920.

These estimates are derived from the Ohio Economic Growth Impact Model. The data used in this analysis are attached. Because the model has been computerized, different situations can be easily examined.

There is no charge for impact studies conducted through an area agent for Community and Natural Resource Development of the Ohio Cooperative Extension Service. For more information, contact your county Cooperative Extension Service office which can put you in touch with your area C&NRD agent.

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**OHIO ECONOMIC GROWTH IMPACT MODEL**

THE OBJECTIVE OF THIS ANALYSIS IS TO ASSIST PEOPLE AT THE LOCAL GOVERNMENT LEVEL IN EXAMINING THE FISCAL IMPACTS OF VARIOUS GROWTH POLICIES, SUCH AS GRANTING TAX ABATEMENTS, EXTENDING WATER AND SEWER LINES, AND DEVELOPING INDUSTRIAL PARKS. CHANGES DUE TO THE LOCATION OF A NEW FIRM ARE ESTIMATED FOR CITY, COUNTY, AND SCHOOL DISTRICT REVENUES AND EXPENDITURES. THE EFFECTS ON THE SERVICE SECTOR (RETAIL STORES) IN THE TOWN AND PERSONAL INCOME IN THE TOWN AND COUNTY ARE ALSO ESTIMATED.

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THE OHIO ECONOMIC GROWTH IMPACT MODEL WAS DEVELOPED BY DR. GEORGE W. MORSE, RESOURCE ECONOMIST, AND JOHN DAVID GERARD, TECHNICAL ASSISTANT, ECONOMIC RESEARCH, DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY, OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER, THE OHIO STATE UNIVERSITY. FUNDING WAS PROVIDED BY THE U.S. DEPARTMENT OF AGRICULTURE, PURSUANT TO TITLE V OF THE RURAL DEVELOPMENT ACT OF 1972.

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# BENEFITS, COSTS AND NET GAINS FROM NEW JOBS

IN COMMUNITY OF ATHENS  
IN A FARM MACH FIRM  
EMPLOYING 59 ADDITIONAL WORKERS

## PRIVATE SECTOR BENEFITS

YEAR 1

NEW INCOME, EMPLOYEES IN CITY	172257.
NEW INCOME, EMPLOYEES IN COUNTY	119965.
NEW INCOME, SERVICE SECTOR	27161.

## CITY GOVERNMENT

ADDITIONAL REVENUES	
PROPERTY TAXES, NEW PLANT	401.
PROPERTY TAXES, NEW HOMES	160.
PROPERTY TAXES, ADDITIONAL TANGIBLE	1849.
INCOME TAX	5646.
STATE AID	4023.
MISC TAXES, NEW RESIDENTS	107.
TOTAL	12186.
ADDITIONAL EXPENDITURES	
POLICE	224.
FIRE	199.
WATER	227.
SEWER	146.
STREETS	69.
OTHER	64.
CAPITAL EXPENSES	0.
TOTAL	929.
NET REVENUES	11257.

## COUNTY GOVERNMENT

ADDITIONAL REVENUES	
PROPERTY TAXES, NEW PLANT	939.
PROPERTY TAXES, NEW HOMES	624.
PROPERTY TAXES, ADDITIONAL TANGIBLE	5156.
SALES TAX	0.
STATE AID	2104.
MISC TAXES, NEW RESIDENTS	63.
TOTAL	8885.
ADDITIONAL EXPENDITURES	
CAPITAL EXPENSES	0.
SERVICES, NEW RESIDENTS	298.
TOTAL	298.
NET REVENUES	8587.

## SCHOOL DISTRICT

ADDITIONAL REVENUES	
PROPERTY TAXES, NEW PLANT	4996.
PROPERTY TAXES, NEW HOMES	3320.
PROPERTY TAXES, ADDITIONAL TANGIBLE	26313.
STATE AID	-24230.
MISC REVENUES	221.
TOTAL	10620.
ADDITIONAL EXPENDITURES	
OPERATING EXPENSES, NEW STUDENTS	3651.
CAPITAL EXPENSES	0.
TOTAL	3651.
NET REVENUES	6969.

# PUBLIC FINANCE IMPACTS OF NEW JOBS

FIRM CODE: 3523  
COMMUNITY: ATHENS

INDUSTRY CODE: FARM MACH  
SCHOOL DISTRICT: ATHENS CITY

DATA CODE: 060201  
COUNTY: ATHENS

## ANNUAL NET BENEFITS TO:

	CITY	COUNTY	SCHOOL DISTRICT
YEAR 1	11257.	8587.	6969.
YEAR 2	11412.	8827.	6741.
YEAR 3	11743.	9417.	9346.
YEAR 4	11714.	8980.	7109.
YEAR 5	11780.	8828.	4429.
YEAR 6	12058.	9010.	4574.
YEAR 7	12114.	8858.	3817.
YEAR 8	12178.	8721.	3133.
YEAR 9	12455.	8910.	3689.
YEAR 10	12518.	8777.	3049.
YEAR 11	12589.	8658.	2472.
YEAR 12	12873.	8860.	4612.
YEAR 13	12943.	8742.	3951.
YEAR 14	13023.	8637.	3355.
YEAR 15	13313.	8851.	5588.
YEAR 16	13392.	8746.	4903.
YEAR 17	13479.	8652.	4287.
YEAR 18	13777.	8876.	6620.
YEAR 19	13864.	8781.	5910.
YEAR 20	13960.	8697.	5270.
PRESENT VALUE OVER 20 YEARS AT 5.0% INTEREST	154508.	110157.	64324.
PRESENT VALUE ADJUSTED FOR PLANT FAILURE	61811.	46920.	-245064.

## SECTION ONE: FIRM AND EMPLOYMENT DATA

1	INDUSTRIAL CLASSIFICATION	
A.	TYPE OF BUSINESS	FARM MACH
B.	SIC CODE	3523
2	LOCATION OF NEW FIRM	
A.	VILLAGE OR CITY	ATHENS
B.	SCHOOL DISTRICT	ATHENS CITY
C.	COUNTY	ATHENS
3	NEW JOBS CREATED	59
4	RESIDENTIAL LOCATION OF WORKERS (PERCENT OF TOTAL)	
A.	MUNICIPAL RESIDENTS	0.40
B.	REST OF COUNTY RESIDENTS	0.30
C.	IN-MIGRANTS TO THE CITY	0.05
D.	IN-MIGRANTS TO THE COUNTY	0.05
E.	COMMUTERS FROM OUTSIDE COUNTY	0.20
5	AVERAGE ANNUAL WAGES	
A.	FOR LOCAL EMPLOYEES	13034.
B.	FOR IN-MIGRANTS	14989.
C.	ANNUAL RATE OF CHANGE	0.090
6	NEW PLANT'S MARKET VALUE	
A.	BUILDINGS AND OTHER REAL PROPERTY	440232.
B.	TANGIBLE PERSONAL PROPERTY	1734543.
7	PERCENTAGE OF WORKERS' INCOMES SPENT IN THE MUNICIPALITY AND COUNTY	
A.	BY MUNICIPAL RESIDENTS IN CITY	0.400
B.	BY MUNICIPAL RESIDENTS IN COUNTY	0.500
C.	BY REST OF COUNTY RESIDENTS IN CITY	0.300
D.	BY REST OF COUNTY RESIDENTS IN COUNTY	0.400
E.	BY COMMUTERS IN CITY	0.100
F.	BY COMMUTERS IN COUNTY	0.250
8	FAMILY SIZE PER EMPLOYEE	3.500
9	INCOME MULTIPLIER	1.200
10	RATIO OF HOME VALUES TO INCOME	2.000

**SECTION TWO: TAX DATA****1 PROPERTY TAX RATES AND REDUCTION FACTORS**

A. COUNTY INSIDE MILLAGE	2.300
B. COUNTY OUTSIDE MILLAGE	4.950
C. COUNTY TAX REDUCTION FACTOR	0.233828
D. SCHOOL INSIDE MILLAGE	4.000
E. SCHOOL OUTSIDE MILLAGE	33.000
F. SCHOOL TAX REDUCTION FACTOR	0.138715
G. CITY INSIDE MILLAGE	2.600
H. CITY OUTSIDE MILLAGE	0.0
I. CITY TAX REDUCTION FACTOR	0.0

2 YEAR OF LAST APPRAISAL OR UPDATE	1978
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3 EXPECTED ANNUAL RATE OF CHANGE IN PROPERTY VALUES	0.080
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**4 SCHOOL DISTRICT TAX BASE - TAXABLE VALUES**

A. REAL PROPERTY	77536170.
B. TANGIBLE PERSONAL PROPERTY	11664447.
C. TANGIBLE PERSONAL PUBLIC UTILITY PROPERTY	16788260.
D. YEAR TO WHICH VALUATIONS APPLY	1978

**SECTION THREE: COUNTY DATA**

1 COUNTY PERMISSIVE SALES TAX RATE	0.0
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2 CHANGES IN STATE AND FEDERAL AID	2104.00
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3 MISCELLANEOUS COUNTY REVENUE PER CAPITA	6.09
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**4 COUNTY OPERATING EXPENSES PER CAPITA**

A. CURRENT OPERATING EXPENSES	28.88
B. EXPECTED RATE OF CHANGE	0.070

**5 TOTAL ANNUAL CAPITAL COSTS**

YEAR 1	0.0
YEAR 2	0.0
YEAR 3	0.0
YEAR 4	0.0
YEAR 5	0.0
YEAR 6	0.0
YEAR 7	0.0
YEAR 8	0.0
YEAR 9	0.0
YEAR10	0.0
YEAR11	0.0
YEAR12	0.0
YEAR13	0.0
YEAR14	0.0
YEAR15	0.0
YEAR16	0.0
YEAR17	0.0
YEAR18	0.0
YEAR19	0.0
YEAR20	0.0

**SECTION FOUR: SCHOOL DISTRICT DATA****1 ENROLLMENT**

A. CURRENT AVERAGE DAILY ENROLLMENT	3930
B. ANNUAL RATE OF CHANGE IN ENROLLMENT	0.0
C. INCREASE IN ENROLLMENT DUE TO NEW PLANT	3

2 TOTAL STATE BASIC AID IN YEAR BEFORE STUDY	1941093.
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3 ANNUAL RATE OF CHANGE IN STATE SUPPORT	0.070
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4 TOTAL CURRENT TRANSPORTATION AID	0.
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5 MISCELLANEOUS REVENUE PER PUPIL	73.62
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**6 SCHOOL OPERATING EXPENDITURES PER PUPIL**

A. CURRENT	1217.00
B. ANNUAL RATE OF CHANGE	0.080

**7 ADDITIONAL CAPITAL COSTS**

YEAR 1	0.0
YEAR 2	0.0
YEAR 3	0.0
YEAR 4	0.0
YEAR 5	0.0
YEAR 6	0.0
YEAR 7	0.0
YEAR 8	0.0
YEAR 9	0.0
YEAR 10	0.0
YEAR 11	0.0
YEAR 12	0.0
YEAR 13	0.0
YEAR 14	0.0
YEAR 15	0.0
YEAR 16	0.0
YEAR 17	0.0
YEAR 18	0.0
YEAR 19	0.0
YEAR 20	0.0

**SECTION FIVE: MUNICIPAL DATA****1 MUNICIPAL POPULATION**

A. CURRENT	18616
B. ANNUAL RATE OF GROWTH	0.0

2 MUNICIPAL INCOME TAX RATE	0.010
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3 YEARS OF TAX ABATEMENT	0
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4 CHANGES IN STATE AND FEDERAL AID	4023.00
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5 MISCELLANEOUS REVENUE PER CAPITA	10.39
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**6 CURRENT ANNUAL OPERATION COST PER PERSON OF MUNICIPAL SERVICES**

A. POLICE	21.70
B. FIRE	19.24
C. WATER	22.02
D. SEWER	14.17
E. STREETS	6.72
F. OTHER	6.24

**7 ADDITIONAL ANNUAL OPERATIONAL COSTS FOR MUNICIPAL SERVICES**

A. POLICE	224.00
B. FIRE	199.00
C. WATER	227.00
D. SEWER	146.00
E. STREETS	69.00
F. OTHER	64.00

**8 CAPITAL INVESTMENTS BY MUNICIPALITY**

YEAR 1	0.0
YEAR 2	0.0
YEAR 3	0.0
YEAR 4	0.0
YEAR 5	0.0
YEAR 6	0.0
YEAR 7	0.0
YEAR 8	0.0
YEAR 9	0.0
YEAR10	0.0
YEAR11	0.0
YEAR12	0.0
YEAR13	0.0
YEAR14	0.0
YEAR15	0.0
YEAR16	0.0
YEAR17	0.0
YEAR18	0.0
YEAR19	0.0
YEAR20	0.0



**SECTION SIX: OTHER DATA**

1	LENGTH OF ANALYSIS	20
2	DISCOUNT RATE	0.050
3	RATE OF INFLATION	0.070
4	RATIO OF VALUE ADDED TO SALES SERVICE SECTOR	0.200
5	PROPORTION OF NEW HOUSING OUTSIDE COMMUNITY REINVESTMENT AREA	
	A. IN THE CITY	0.900
	B. IN THE COUNTY	0.950
6	INCOME LEAKAGE FACTOR	
	A. IN THE CITY	0.30
	B. IN THE COUNTY	0.35
7	RATE OF DEPRECIATION	0.04
8	CUMULATIVE PROBABILITY OF PLANT FAILURE	
	YEAR 1	0.014
	YEAR 2	0.097
	YEAR 3	0.225
	YEAR 4	0.353
	YEAR 5	0.481
	YEAR 6	0.543
	YEAR 7	0.605
	YEAR 8	0.667
	YEAR 9	0.699
	YEAR10	0.731
	YEAR11	0.751
	YEAR12	0.771
	YEAR13	0.791
	YEAR14	0.811
	YEAR15	0.831
	YEAR16	0.851
	YEAR17	0.871
	YEAR18	0.891
	YEAR19	0.911
	YEAR20	0.931

### LOCAL COMMENTS OR QUESTIONS

Research results are generally more useful if there is local input from area citizens as well as carefully developed research methods. We would welcome your reactions, comments, or questions on this report. Just write to us on the following form. Or call us at 614-286-2177.

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Study on Farm Machinery Manufacturing Firm for Athens, Ohio  
in Athens, Ohio  
November 1979

#### Data Used in Analysis:

Data items that this study should re-examine are: \_\_\_\_\_

\_\_\_\_\_

The reason for re-examining these data is: \_\_\_\_\_

\_\_\_\_\_

#### Local Growth Policies:

In addition to the decisions studied here, I would like to see a study of the effects on Athens of: (check one or more)

\_\_\_\_\_ the investment in an industrial park by the city

\_\_\_\_\_ the investment in an industrial park by the county

\_\_\_\_\_ a property tax abatement for the new firm

\_\_\_\_\_ a comparison of the impacts of different types of firms

\_\_\_\_\_ other types of firms (please describe \_\_\_\_\_)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

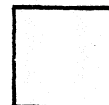
Other questions or comments:

If you have any questions to which you would like a response, include your name and address: \_\_\_\_\_

Mail form to George Morse by folding sheet on dotted lines and staple or tape.

\* \* \* \* \*

Return Address: \_\_\_\_\_



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